TRICHOPTERYGIDAE OF AUSTRALIA AND ADJACENT ISLANDS.

DESCRIPTIONS OF FIVE NEW GENERA AND TWENTY NEW SPECIES.

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(Twenty-three Text-figures.)

[Read 24th June, 1931.]

In this second paper on the Trichopterygidae twenty new species are described under ten genera, five of the latter being new. Of the new species twelve are island forms, not yet having been found on the mainland, although one, *Philagarica parva* from Lord Howe Island, is very closely allied to *P. agilis* Deane, from the Macleay River district of New South Wales. This is another example of the close alliance between the faunas of this island and the continent of Australia.

In the majority of the genera from the Australasian Region the metasternum attains the sides of the body, just as in the forms from the European Region those possessing this character are in the majority. Blind beetles are better represented in Australia than in other parts, there being one in America, none in Europe, Asia and Africa, whilst there are eight recorded up to date in Australia.

Since the publication of the first paper I have acquired a knowledge of the methods of mounting insects on glass slides for the microscope, and the advantages of this method of examination. In this I have been greatly helped by Mr. E. B. Blackbourne, who made the first slides for me.

The author hopes in a subsequent paper to draw up a table of classification for the Trichopterygidae. The diversity of forms occurring suggests a complex classification, as in the large family Carabidae, rather than a simple one such as in, say, the Anthicidae. This seems to indicate great probable developments for the Trichopterygidae in the future. In the Carabidae there is great structural difference between the genera *Mormolyce* and *Catascopus*, and between *Silphamorpha* and *Notonomus*; and in the Trichopterygidae the separation is equally pronounced between *Trichopteryx* and *Nanosella* or between *Ptilium* and *Rodwayia*. Contrast this situation with that in the family Anthicidae, where all the present genera are fairly closely allied. The localities, from which the species described in these pages have been collected, are comparatively few, and although some are widely separated geographically, yet others are neighbouring. In spite of this, widely different forms appear in the one locality or in adjacent ones. The large amount of material forwarded from the South Australian Museum contains none of the species appearing amongst the contributions forwarded by C. Oke; also the specimens from Canberra, per Miss Winifred Kent Hughes, contain two of *Ptenidium*, which genus has not appeared in either of the other two collections.

The true *Trichopteryx* occurs in Australia and adjacent islands. These forms conform closely to the set of characters laid down by authors in their descriptions

for the genus. There are, however, superficial distinctions between the Trichopteryx fauna of this region and that of the European; the majority of the English species are more nitid, blacker, less pubescent, and the pubescence is shorter than in the Australasian forms. They are also less sharply quadrate. But the main generic features are somewhat constant around the Globe. Now in *Ptilium* this is not so; this is a genus whose species appear to range widely with certain characters showing much variation; these characters are the posterior angles of the prothorax, the terminal segments of the antennae, and the degree of separation of the hind coxae, characters which are usually looked upon as of generic rank, and yet since no line can be drawn we must merge them all into one genus.

Matthews found certain species to be so widely distributed as to occur in most parts of the world. Contrasted against this may be set the fact that I have not found any two widely separated localities yield the same species, although a comparatively large amount of material has been collected. Moreover, the differences between certain species of *Trichopteryx* from neighbouring localities in Australasia, though not always great, are nevertheless as great or greater than between some of the English species, e.g., *T. bovina* Mots., *T. atomaria* De Geer, and *T. sericans* Heer.

EPIBAPTUS, n. gen. (Text-fig. 1.)

Somewhat elongate, lightly convex, margin much interrupted, widest across elytra. Head subspathulate, narrow, rather convex, front gently rounded, sides sinuous, genae full. Eyes large, prominent, set somewhat obliquely forward. Antennae long, eleven-segmented; scape rather large, barrel-shaped, pedicel invert obconic; 3 to 7 slender cylindric, 8 swollen at middle, 9 and 10 large, flask-shaped, 11 acorn-shaped, 8 to 11 strongly setose, the setae being longer than the corresponding segments on which they are placed. Pronotum irregular, convex, widest at middle; anterior margin convex at centre, posterior margin triconcave; lateral margins concave on posterior half, forming posterior angles, slightly convex on anterior half, with reflex margins; bifossate near base; fossae transverse. Scutellum depressed near base, rather long in proportion to width; anterior margin convex, sides concave. Elytra sub-elliptic, convex, widest at middle, rather narrow at base, ample, completely concealing abdomen. Legs slender. Tibiae long, anterior straight, posterior slightly curved. Tarsi rather robust, tapering to apex.

Apparently nearest to *Dimorphella* Matth., of Brazil, South America, from which it differs notably in having eyes much larger, head narrower in front, pronotum transverse and elytra widest at or near middle, these also covering abdomen. The general shape of the pronotum is only faintly suggestive of the American genus.

Genotype, the following species.

EPIBAPTUS SCUTELLARIS, n. sp. Text-fig. 1.

Scarcely nitid, sparsely pubescent, punctate, cinnamomeous. Head nitid, dark-brown, finely punctate. Antennae, scape and pedicel light-brown; 3 and 4 stramineous, 5 to 8 lurid, 9 to 11 dark-brown; segments 1 to 7 sparsely and irregularly, 8 to 11 strongly, setose; setae on 8 and 9 cream on apical, brown on basal half; setae on 10 and 11 almost black. Eyes silvery; facets coarse. Legs light-brown. Pronotum nitid, smooth, glabrous. Scutellum nitid, glabrous, lurid.

Elytra somewhat nitid, sparsely pilose, coarsely and irregularly punctate, walnut-brown, punctures shallow, hairs golden-brown; apices dehiscent. Legs light-brown. Length, 0·86 mm.; width, 0·38 mm.

Habitat.—Emerald, Victoria (C. Oke). Fern Tree Gully (C. Deane).

Type in Coll. Deane.

The metasternum reaches the sides of the body, the episterna not being visible. The coxae are small, the posterior pair being widely separated. The wings are narrow and the stalk long and slender, thickening a little gradually towards the base and apex.

PARATUPOSA, n. gen. (Text-fig. 2.)

Elongate, cylindro-elliptic, somewhat subereous, widest across elytra. Head subtrapeziform, prominent, largely visible from above, widest across eyes. Eyes visible from above, of medium size. Antennae having the club equal in length to the remainder of the flagellum; scape moderate, pedicel rather large, of peculiar form, its apex suddenly reduced a little in diameter giving the appearance of an extra short broad segment; segment 3 cylindric, 4 subcylindric, 5 barrel-shaped, 6 nearly spherical, 3 to 6 of approximately equal thickness; 7, 8 and 9 transverse, increasing in width; 10 and 11 very large; apical segment wide over basal half, suddenly reduced in diameter just beyond middle; sub-apical segment bi-truncate-conic, somewhat transverse, the sides of basal half only slightly tapering; length of antenna 0·22 of length of insect. Pronotum convex, widest before base, basal margin straight, anterior and lateral convex; posterior angles very obtuse, anterior obsolete. Scutellum medium, lateral margins convex. Elytra widest at or just before middle, lightly convex or somewhat depressed; rounded and dehiscent at apex, not reaching to apex of abdomen. Abdomen elongate, four apical tergites exposed. Coxae: anterior moderate, elliptic, contiguous; intermediate small, globular, contiguous; posterior large, flat, subdeltoid, almost contiguous. Femora: anterior narrow, of medium length; intermediate broad, rather short; posterior small. Tibiae and tarsi subequal.

This genus differs from the only closely allied genus, *Nanosella*, from Central America in having the pedicel of antenna as long as the scape and segments 7, 8 and 9 transverse ovate-elliptic instead of scutellate, pronotum widest at one-third from base to apex instead of at base, elytra dehiscent at apex and exposing much more of the abdomen.

Genotype, the following species.

PARATUPOSA PLACENTIS, n. sp. (Text-fig. 2.)

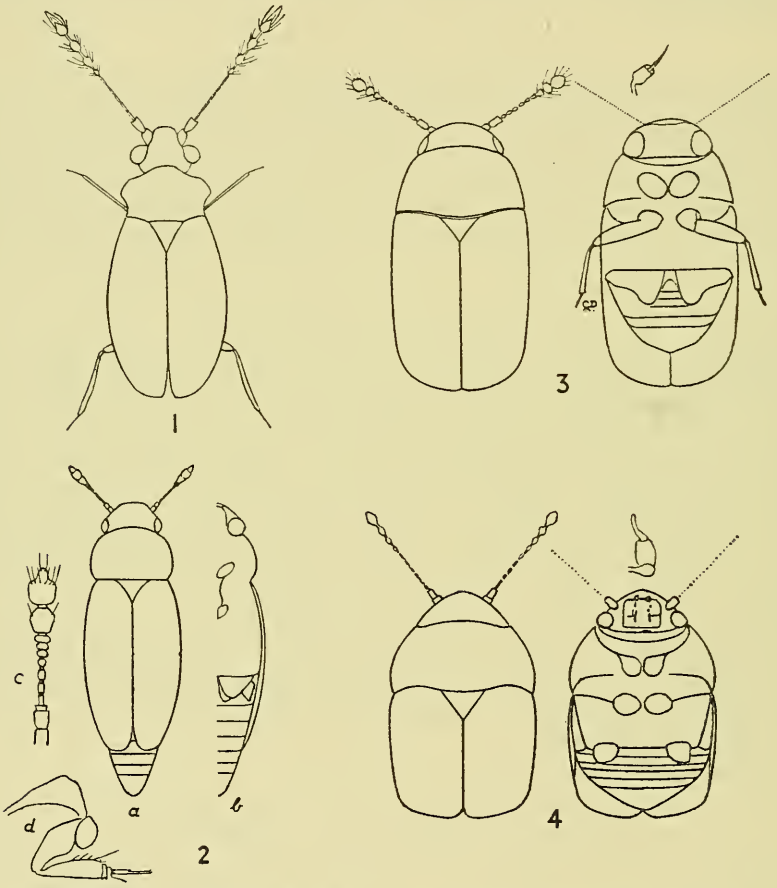
Light walnut-brown, pubescent. Head more or less narrowly rounded in front, convexity feeble above, sides oblique; sparsely and irregularly pubescent; dark-brown especially near eyes. Eyes black, rather conspicuous. Antennae pale-yellow, vitreous, almost glabrous. Palpi stramineous. Pronotum convex, paler on centre of disc, darker at all margins. Scutellum of equal shade to elytra. Elytra strongly pubescent, slightly darker at lateral margins, yellow at apices. Abdomen yellow, margins of ventral segments lightly setose, setae yellow. Pygidium fringed with more numerous hairs; these short. Length, 0·39 mm.; width, 0·13 mm.

Habitat.—Mt. Lamington, N.E. Papua, 1,300 to 1,500 ft. (C. T. McNamara).

Type in South Australian Museum, cotypes in Coll. A. M. Lea and Coll. Deane.

ISOLUMPIA, n. gen. (Text-fig. 3.)

Obovate-quadrate, widest across elytra, somewhat depressed or very slightly convex, margin almost entire. Head medium, produced downwards at mouth, widely rounded in front, rather broad, convex. Eyes visible from above. Antennae of moderate length, 0·32 of the length of body, rather robust, strongly clavate; scape medium, pedicel rather large, cylindric; 3 to 6 globular, 7 to 9 conic, 10 and 11 nearly spherical; 10 broader than long, 11 longer than broad; 9, 10 and 11 setose, forming the club. Palpi with terminal segment long, the broadest segment sub-



1.—*Epibaptus scutellaris*, n.g. et sp. 2.—*Paratuposa placentis*, n.g. et sp.
3.—*Isolumpia divina*, n.g. et sp. 4.—*Etronia convexa*, n.g. et sp.

cylindric. Pronotum widest at base, base as wide as base of elytra; lateral and anterior margins convex; posterior angles well formed, anterior obsolete. Scutellum deltoid, not large. Elytra subquadrate, sides parallel, apices not dehiscent, concealing abdomen. Coxae: anterior rather large, oval, oblique, contiguous; intermediate rather small, separated; posterior large, deep, attaining sides of body, not contiguous.

Does not appear to be closely allied to any other genus; its nearest ally is probably *Philagarica*, with which it has in common the broad posterior coxae; it differs conspicuously in the shorter and differently constructed antennae, the parallel form of the body and the head and eyes being largely visible from above.

Genotype, the following species.

ISOLUMPIA DIVINA, n. sp. (Text-fig. 3.)

Pubescent, light-brown. Head sparsely pubescent. Eyes black. Palpi cream-coloured. Antennae and underside of head and mouth parts flavous to cream. Upper surface of head, pronotum, scutellum and elytra uniformly brown. Metasternum brown shading to light-brown near posterior margin. Prosternum and mesosternum yellow. Abdomen with basal ventral segments dark-brown, apical segments brown. Apical angle obtuse but sharply defined. Legs flavous. Posterior coxae brown at centre, yellow at edges. Tarsi stramineous, slender, rather long; claws small. Length, 0·4 mm.; width, 0·2 mm.

Habitat.—N.E. Papua; Mt. Lamington, 1,300–1,500 ft. (C. T. McNamara).

Type in South Australian Museum, cotypes in Coll. Deane.

ETRONIA, n. gen. (Text-fig. 4.)

Oval, convex, margin entire, widely rounded in front, truncate behind. Head rounded in front, broad, convex, easily visible from above, widest at base, deeply inserted in prothorax. Eyes little visible from above, small. Antennae 11-segmented, rather long, of normal thickness; scape large, barrel-shaped; pedicel medium, cylindric; 3 and 4 cylindric, 5 and 6 subcylindric, 7 and 8 slightly swollen at middle, 9 to 11 forming the club, 9 globular, much smaller than 10, 10 smaller than 11. Setae sparse, not longer than the segments on which they are set. Palpi: terminal segment thickened at base, filling apex of subterminal; subterminal segment barrel-shaped; next swollen at apex, forming seat for the one above. Pronotum very convex, widest just before base; marginal curvature uniform; posterior angles well defined, hardly acute. Scutellum rather large, lightly convex; sides a little convex. Elytra quadrate, almost rectangular, lightly convex; sides subparallel, apices broad, not dehiscent at apex, covering abdomen. Abdomen short, not spinose, strongly setose. Metasternum not reaching sides of body; episterna widening posteriorly. Coxae: anterior subglobular, medium, contiguous; intermediate subtriangular, rather small, almost contiguous; posterior subtriangular, rather small, remote. Legs robust. Wings: breadth of membrane normal.

Allied to *Trichopteryx*, which it resembles in general form, structure of antennae, underside of head and mouth parts, the disposition of prosternum and the shape of the anterior and intermediate legs. It is clearly separated from this genus, however, by the metasternal episterna, which are more suggestive of *Actinopteryx* and *Neotrichopteryx*, and also by the posterior coxae and the apex of abdomen.

Genotype, the following species.

ETRONIA CONVEXA, n. sp. (Text-fig. 4.)

Nitid, setose, dark-brown and yellow. Head black, hairs or setae abundant, standing upright. Eyes black. Antennae: scape and pedicel yellow; extreme edge of apex of pedicel reddish-brown; flagellum cream-coloured. Pronotum very dark-brown, pale at posterior angles; lightly, irregularly and sparsely setose; smooth,

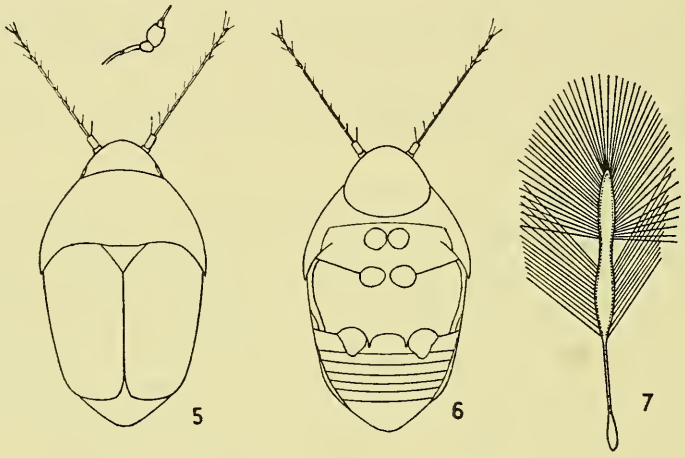
nitid. Scutellum brown, highly nitid, glabrous. Elytra yellow, transparent; the setae white. Legs yellow, setose, rather robust. Abdomen short, dark-brown. Length, 0·67 mm.; width, 0·43 mm.

Habitat.—Stewart River, Queensland (Hale and Tindale).

Type in South Australian Museum.

ACTINOPTERYX COLOSSUS, n. sp. (Text-figs. 5, 6, 7.)

Obovate, widest across pronotum, convex, dark-brown, pubescent. Head rather narrow, convex, black, pilose; somewhat nitid; clypeus slightly marginate. Eyes visible from above, rather small, silvery. Antennae long, 0·55 of length of body, slender, not clavate, setose; scape somewhat short, pedicel rather large, sub-



5-7.—*Actinopteryx colossus*, n. sp.

cylindric, yellow, darker near apex, apex rounded; segment 3 pale-yellow, 4 to 8 lurid, 3 to 6 long, cylindric, slender; 7 to 8 barrel-shaped; 9 to 11 grey, rather swollen in middle. Palpi with the globular segment ovoid, terminal normal. Pronotum widest just before base, rather narrow in front, convex, pilose, dark-brown, coarsely rugose, light-brown on posterior angles, anterior angles almost obsolete, posterior acute. Scutellum normal, sides concave, hardly depressed, not easily visible, rather concealed by pilosity. Elytra widest at base, broad at apices, somewhat depressed, dehiscent at apex, dark-brown, paler at apices, pubescent, finely rugose, hairs white, yellowish-brown at apices. Legs deep-yellow. Abdomen dark-brown. Wings: stalk long, narrow, swollen at base. Length, 0·9 mm.; width, 0·52 mm.

Habitat.—Noumea, New Caledonia (A. M. Lea).

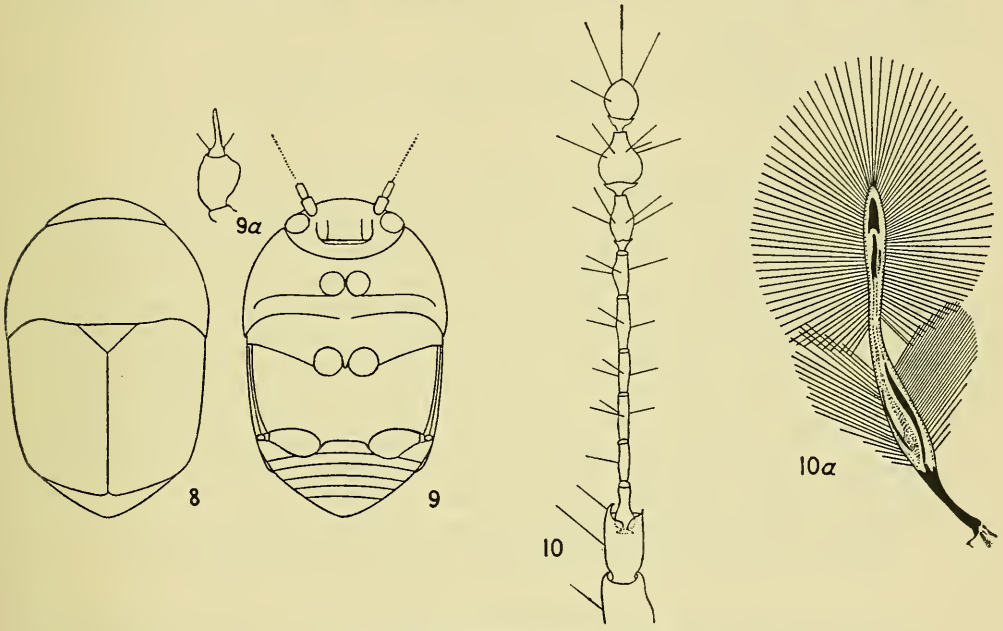
The mesosternal carina is straight and narrow and elevated, the posterior margin of metasternal episternum not reaching side. Metasternum reaching nearly to sides of body, posterior margin deeply excavated for insertion of coxae; intercoxal portion also deeply excavated. The coxae are moderately distant, deep in proportion to width, subtriangular, and not nearly reaching to sides.

The description has been rather full, including details which might be looked upon as of generic importance only, because it is realized that there may ultimately arise a difference of opinion regarding the proper genus in which to

place this species. It differs from *Trichopteryx* in form, wings, antennae, coxae, metasternum, etc., and from the true *Actinopteryx* in the metasternal episterna being visible and even conspicuous.

ACTINOPTERYX HERCULES, n. sp. (Text-figs. 8, 9, 10.)

Oval, highly convex, blotchy-brown, pubescent, widest across pronotum. Head nearly black, somewhat nitid, broad. Eyes black, a little prominent. Antennae rather small; scape and pedicel a little flattened, reddish-brown; flagellum lurid; segments 9, 10 and 11 forming the club; 8 not swollen. Pronotum scarcely nitid, pubescence very irregular, hairs golden; widest a little before base; posterior angles normal; rectilinear portion of posterior margin extending beyond basal angles of scutellum; very dark on centre of disc. Scutellum rather short, well defined. Elytra quadrate, narrowing slightly towards apices; apices not



8-10.—*Actinopteryx hercules*, n. sp.

dehiscent. Abdomen with pygidium rather broad, exposed, not spinose. Prosternum and mesosternum orange-brown, glabrous; metasternum reddish-brown, pilose; ventral plates of abdomen yellowish-brown, pilose. Metasternal episterna visible, parallel; mesosternal intercoxal process and post coxae trichopterygiform. Legs yellowish-brown, posterior rather small. Wing-stalk short, thick, slightly curved. Length, 1·12 mm.; width, 0·66 mm.

Habitat.—Ourimbah, N.S.W. (A. M. Lea).

Type in Coll. Lea, cotypes in Coll. Deane and South Australian Museum.

Owing to the general form of the insect, together with the absence of tridentate pygidium, and to the inter-post-coxal margin of metasternum, this species has been included with *Actinopteryx* in preference to adding to the number of genera carrying only one species. The chief points of difference from the typical form of *Actinopteryx* are (1) metasternum not reaching sides of body but being

separated by the episterna, which are conspicuous though rather narrow, and (2) posterior coxae broad, reaching nearly to sides.

TRICHOPTERYX FLAVIPENNIS, n. sp. (Text-fig. 11.)

Oval-quadrate, widest across prothorax, lightly convex, pilose, hardly nitid. Head somewhat narrowly rounded in front, convex, black, the hairs brown at centre, black at sides. Eyes scarcely visible from above, black. Antennae hairy; scape and pedicel large, yellow; scape barrel-shaped, pedicel cylindric; segments 3 to 11 dark-brown; 3 to 8 slender, subcylindric; 9 and 10 rather large, ovoid; 10 much larger than 9; 11 elliptic. Pronotum sparsely pilose, black, rather nitid; posterior angles dark-brown. Scutellum glabrous, rugose, black. Elytra strongly pilose, somewhat depressed, flavous, opaque; apices transverse. Wings robust, membrane cream-coloured, strongly marked, veins brown, marginal ciliae dark-brown. Pygidium exposed, faintly trispinose, hairy. Legs yellow. Length, 0·92 mm.; width, 0·56 mm.

Habitat.—Ovalau, Fiji Islands (A. M. Lea).

Type in South Australian Museum, cotype in Coll. Deane.

Does not appear to be closely allied to any other described species.

TRICHOPTERYX SYDNEYENSIS, n. sp. (Text-fig. 12.)

Widely obovate to subquadrate, widest equally across prothorax and elytra, somewhat depressed, strongly pilose, ferrugineous. Head broad, widely rounded in front, rather deeply set in prothorax, largely visible from above. Eyes cream-coloured, scarcely visible from above, rather small. Antennae: scape and pedicel large, yellow; flagellum very slender, cream-coloured; apical segment stramineous to hoary. Prothorax widest just behind middle; lateral margins unusually convex near centre; anterior angles obtuse, posterior slightly acute. Scutellum normal or rather small; lateral margins straight. Elytra widest near middle, lateral margins convex; posterior lateral angles widely rounded, medial slightly rounded, somewhat dehiscent at apex; depressed, strongly pilose, ferrugineous. Abdomen faintly trispinose. Legs lurid, of medium size; intermediate and posterior tibiae spinose on interior margins. Length, 0·88 mm.; width, 0·48 mm.

Habitat.—Sydney, N.S.W. (per Miss Winifred Kent Hughes).

Type in Museum of Division of Economic Entomology, Canberra.

TRICHOPTERYX NORFOLKENSIS, n. sp. (Text-fig. 13.)

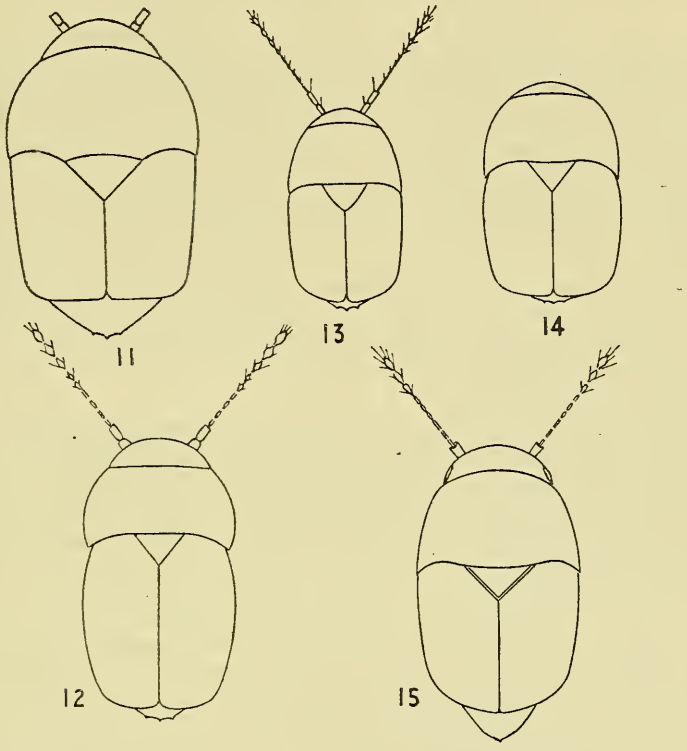
Ovate-quadrate, very lightly convex, pubescent, dark walnut-brown, finely rugose, hairs pale-brown. Head medium, evenly rounded in front, convex, sparsely pubescent; hairs very short, irregular. Eyes inconspicuous, scarcely visible from above, of moderate size. Antennae rather long; scape and pedicel yellowish-brown tipped with dark-brown; flagellum dark-brown. Pronotum widest almost at base; convex, margins lightly curved, posterior angles normal; slightly darker than elytra. Scutellum sharply defined, side margins curved; slightly darker than elytra, nearly as dark as pronotum. Elytra quadrate, lightly depressed, transparent at apical margin; pubescence very decumbent, strongly parallel. Wings dark-brown. Legs orange-yellow. Length, 0·64 to 0·74 mm.; width, 0·36 to 0·42 mm.

Habitat.—Norfolk Island (A. M. Lea).

Type in South Australian Museum, cotypes in Colls. Lea and Deane.

Compared with *T. australica* Deane, on specimens mounted in canada balsam on glass slides, the two insects respond differently when subjected to the same

treatment for clarification, removal of oils and moisture, etc. The body substance appears more robust, much less transparent, and yet the wing membranes are much clearer, being practically devoid of markings.



11.—*Trichopteryx flavipennis*, n. sp. 12.—*T. sydneyensis*, n. sp.
13.—*T. norfolkensis*, n. sp. 14.—*T. walkomi*, n. sp.
15.—*T. jocosa*, n. sp.

TRICHOPTERYX CERVINA, n. sp.

Ovate-square, convex, hardly nitid, rugose, reddish-golden-brown, scarcely and faintly pubescent in parts. Head red, almost glabrous, rather narrowly rounded in front. Eyes silvery-pink, not prominent. Antennae orange-coloured; scape short, pedicel barrel-shaped. Pronotum widest at base, darker near anterior margin, faintly rugose, thinly pubescent; hairs golden; posterior angles well formed, somewhat acute; anterior angles very obtuse. Elytra quadrate. Abdomen bright-brown, pygidium exposed, tridentate, rather sharply pointed. Metathorax and mesothorax very nitid, almost glabrous, tan-coloured. Legs robust; coxae and femora yellow; tibiae and tarsi cream-coloured. Wings very transparent; membrane almost colourless with orange-coloured markings; hairs of fringe light golden-brown. Length, 0·75 mm.; width, 0·39 mm.

Habitat.—Sydney, N.S.W. (per Miss Winifred Kent Hughes).

Type in Museum of Division of Economic Entomology, Canberra.

Differs from *T. australica* Deane, in having head shorter and more narrowly rounded in front; posterior angles of pronotum sharper but not longer; surface rugose; colour as described. The colour difference between the two species as

given in the descriptions is not due to immaturity of the specimen used for the new species. I have taken large numbers of *T. australica* Deane in all stages of maturity, and they shade from creamy-straw colour, through livid and light walnut-brown, to the standard shade, without any tint of red.

Trichopteryx walkomi, n. sp. (Text-fig. 14.)

Oval-quadrate, lightly convex, black, somewhat nitid, sparsely pubescent, hairs hoary, finely granulate. Head broad, somewhat narrowly rounded in front, gently sloping on forward declivity, convex at sides, black, hardly nitid, scarcely pubescent. Eyes inconspicuous, but just visible from above. Pronotum subquadrate, widest at base, sides subparallel, posterior angles acute; black, nitid, sparsely pubescent, finely granulose. Scutellum rather large, clearly defined; side margins rectilinear. Elytra quadrate, parallel, scarcely dehiscent, depressed, black, pubescent. Prosternum with episterna and epimera distinct. Mesosternal intercoxal process a long narrow sharp point. Coxae: anterior large, globular, yellow, semitransparent; intermediate depressed, black; posterior very thin, broad, transparent. Femora light-brown; anterior medium, intermediate broad. Length, 0·72 mm.; width, 0·45 mm.

Habitat.—Sydney, N.S.W.

Type in Museum of Division of Economic Entomology, Canberra.

This species differs from *T. australica* Deane in having head shorter, pronotum more quadrate, posterior angles more acute and lateral margins of pronotum less convex near base; pedicel of antenna broader at apex. From *T. norfolkensis*, n. sp., it can be distinguished by form broader, pronotum more quadrate, lateral margins of scutellum rectilinear, apices of elytra less oblique.

Trichopteryx jocosa, n. sp. (Text-fig. 15.)

Oval-rectangular, convex, black, strongly pilose, widest at the base of pronotum. Head moderately visible from above, strongly pilose, dark-brown, setae very thick, black; front moderately produced, anterior side marginal corners flattened, margins raised; mouth produced downwards, palpi globular, segment very large ovoid, stem or supporting and apical segments very slender. Eyes moderate, just visible from above. Antennae rather long to moderate; first segment concealed from above, first and second segments cylindro-conical, expanding slightly towards apex; 3, 4, 5 slender, cylindric; 6, 7, 8 somewhat barrel-shaped to sub-cylindric; 8 conic, 9, 10 oval-elongate. Scape and pedicel lurid, 3 to 8 stramineous, club grey. Pronotum widest at the base, side and front, margins convex, basal margin strongly concave at the sides, slightly concave at the middle, hind angles acute. Scutellum large, wide, triangular, yellow; anterior margin slightly concave, side margins straight. Elytra yellow near base, remainder brown; thickly pubescent, slightly tapering, widest at the base, posterior lateral angles greatly rounded, medial posterior angles not acute, not dehiscent at apex. Pygidium exposed, pointed obtusely, not tridentate. Legs light-brown. Wings: membrane narrow, marked with black; hairs of fringe black, 3·4 times as long as the width of membrane at its widest part. Length, 0·76 mm.; width, 0·42 mm.

Habitat.—Mt. Lamington, N.E. Papua (C. T. McNamara), 1,300–1,500 ft.

Type in South Australian Museum.

Differs from the typical form of *Trichopteryx* to such an extent that I was considering proposing a new genus to receive it. The notable features are head with broader front, its base unconformable with outline of prothorax, eyes more

visible from above than in the type of the genus; the pronotum also is more convex in front. The pygidium is particularly hairy, but the tridentate formation is visible with difficulty. The posterior tibiae are larger than usual.

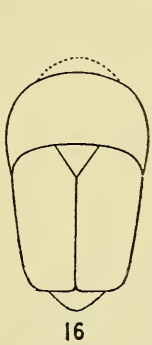
MYRMECOTRICHIS ACUTANGULA, n. sp. (Text-fig. 16.)

Ovate, somewhat depressed, walnut-brown, very pubescent. Head very dark, slightly pilose on anterior, strongly nitid on posterior, half of upper surface. Eyes rather small, black. Antennae grey, scape and pedicel lurid, the latter furnished with a large seta on anterior margin of apex. Pronotum with posterior angles lurid, strongly formed, acute; pubescence very fine and short. Scutellum of moderate size, slightly darker than elytra, distinguishable with difficulty owing to pubescence. Elytra finely granulate, quadrate, slightly tapering; apices somewhat lurid. Abdomen with pygidium exposed; dentations obsolete. Length, 0·81 mm.; width, 0·45 mm.

Habitat.—Vanua Lili, Fiji Islands (A. M. Lea).

Type in South Australian Museum.

Owing to this description having been drawn up from a single specimen, and that from a remote locality, the author has deemed it inadvisable to mutilate the insect further. The head is severed from the body and the prothorax is twisted at a considerable angle to the body. Moreover, I do not think it wise to mount a unique type specimen in balsam for a slide, as the original appearance of the creature is thereby to some extent lost. For these reasons the amount of detail given is rather meagre. The only other species of this genus is *M. aequatorialis* Motschulsky from Central America, from which the new species appears to differ in having antennae more slender, abdomen less exposed and elytra much less tapering; the upper surface is flattened instead of being strongly convex, and pubescent instead of nitid. Many other differences exist to make the new species strongly dissimilar to the old one.



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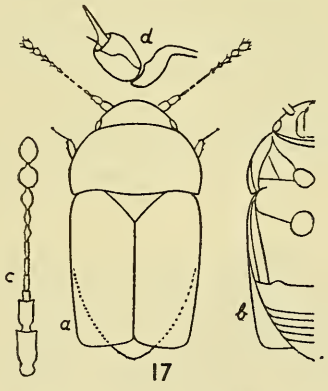


17

16.—*Myrmecotrichis acutangula*, n. sp. 17.—*Neotrichopteryx grandelytra*, n.g. et sp.

NEOTRICHOPTERYX, n. gen. (Text-fig. 17.)

Subquadrate or widely obovate, somewhat depressed, very little wider across prothorax than elytra. Head largely visible from above, deeply set in prothorax, widely rounded in front, broad, convex above. Eyes rather small, easily visible from above. Antennae of medium length and form; scape large; pedicel smaller, pitcher-shaped; segments 3 to 6 slender, cylindric; 7, 8 and 9 slender, elongate-

elliptic; 10 large, nearly spherical; 11 acorn-shaped, large; clothing sparse. Palpi prominent; stem slender, curved, club large, globular; apical segment long, slender, with a stout spine arising at base. Pronotum widest before base, convex; anterior and lateral margins convex; posterior angles not acute, anterior angles obsolete. Scutellum wide, triangular, side margins slightly concave. Elytra rather large, quadrate, not concealing apex of abdomen. Prosternal episterna and epimera distinct. Mesosternal process mucronate. Metasternum not attaining sides of body; metasternal episterna very conspicuous. Legs moderate, posterior rather small; anterior and intermediate coxae almost globular, contiguous, posterior subtriangular, remote. Tarsi equal, claws normal. Abdomen with six visible ventral segments.

This genus differs from *Trichopteryx* in having 9th antennal segment scarcely larger than 8th, pedicel narrower than scape, posterior angles of pronotum not acute, elytra expanded at apex, metasternal episterna very conspicuous and sharply out of plane with metasternum and extending some way over coxae. The posterior coxae are smaller. Also in the genotype species the eyes are smaller and set more outwards, more easily visible from above, and the apex of abdomen is faintly quinque- instead of tri-spinose.

Genotype, the following species.

NEOTRICHOPTERYX GRANDELYTRA, n. sp. (Text-fig. 17.)

Chestnut-brown, nitid, finely and irregularly punctate, pubescent. Head light-brown; punctures very fine and close; hairs short and sparse. Eyes black. Antennae: scape and pedicel lurid, flagellum stramineous. Pronotum with a very fine pattern of punctation or honeycombing superimposed by coarse irregular punctures; hairs pointing in all directions. Elytra dark-brown, except at edges, especially apices, which are almost lurid and diaphanous; the fine punctation almost obsolete, the coarse punctures pronounced; hairs, although irregularly planted, are all pointing backwards; apices of elytra broad, posterior margins forming an obtuse reentrant angle. Legs lurid. Ventral surface of body light-brown, except metasternum and its episterna, which are ferrugineous. Length, 0·82 mm.; width, 0·42 mm.

Habitat.—Lord Howe Island (summit of Mt. Gower; A. M. Lea).

Type in South Australian Museum, cotypes in Colls. Lea, Deane, National Museum.

PTILIUM TORRESENSIS, n. sp. (Text-fig. 18.)

Elliptico-rectangular, widest across elytra, somewhat depressed, scarcely opaque, pubescent, brown. Head rather long, widely rounded in front, pubescent, hardly nitid, dark-brown. Eyes rather small, black. Palpi maxillary with terminal segment long, slender, faintly curved; segment 3 subspheroidal. Antennae rather short, 0·42 of length of body; scape normal to rather large, pedicel narrower, tapering to apex; 3 to 8 slender and rather short; 9 large, as large as 10; 11 invert acorn-shaped. Pronotum widest at middle; lateral margins very convex at middle, lightly convex near anterior angles, concave near posterior angles, these rectangular; pubescent, brown. Scutellum normal. Elytra widest just before centre, subparallel, rather broad across apices, scarcely dehiscent; pubescent, brown. Wings: membrane colourless; central vein and hair fringes black. Abdomen completely covering elytra; six visible ventral segments, 4th with a

broad tuft of hairs along centre of posterior margin. Mesosternum with intercoxal process rather long. Metasternum with intercoxal piece broad, widely excavated on posterior margin. Coxae: anterior contiguous, somewhat globular; intermediate contiguous, deeply set, subdepressed; posterior broad, rather distant. Femora: anterior and intermediate broad, posterior small. Tibiae and tarsi medium. Length, 0·6 mm.; width, 0·28 mm.

Habitat.—Murray Island, Torres Straits (A. M. Lea).

Type in South Australian Museum; cotypes in Colls. Deane and South Australian Museum.

Note.—Beetle emerging from chrysalis is on card beside centre specimen (type).

This species differs from *P. simsoni* Matth. in having the ninth segment of the antenna unusually large, being practically as large as the tenth, and thus forming with this and the terminal one a three-segmented club. The head is shorter and the eyes smaller. The base of the pronotum near the angles is not oblique; apices of elytra less rounded and the pygidium not visible from above. The general form is slightly more parallel.

In all the species described herein under the genus *Ptilium*, the form is more parallel and rectangular, the surface more depressed or flat on top and the pronotum wider in proportion, being nearly as wide as elytra, than in the European species of which I have examples, viz., *P. myrmecophilum* Allib., *P. foveolatum* Allib. and *P. trisulcatum* Aube.

PTILIUM FLAVOTERMINUM, n. sp. (Text-fig. 19.)

Elongate, parallel, depressed, opaque, coarsely punctate, sparsely clothed with a fine, very short, white pubescence, walnut-brown, elytra yellow at apices. Head black, large, widely rounded in front, wide at base. Eyes somewhat narrow above, silvery. Antennae clothed with very short hairs, yellow; scape and pedicel darker at apices, scape of normal length, pedicel rather longer; segment 3 short, small, conic, 4 to 7 long slender cylindric; 8 and 9 small, elliptic; 10 and 11 large, ovoid. Pronotum lightly convex, sides evenly curved, anterior angles obtuse, posterior angles obsolete, basal margin convex at centre. Scutellum as long as wide, side margins concave near apex. Elytra subparallel, the yellow colour of apices shading into the main dark-brown about one-fifth from apices, entirely concealing abdomen. Legs light-brown. Length, 0·6 mm.; width, 0·2 mm.

Habitat.—Noumea, New Caledonia (A. M. Lea).

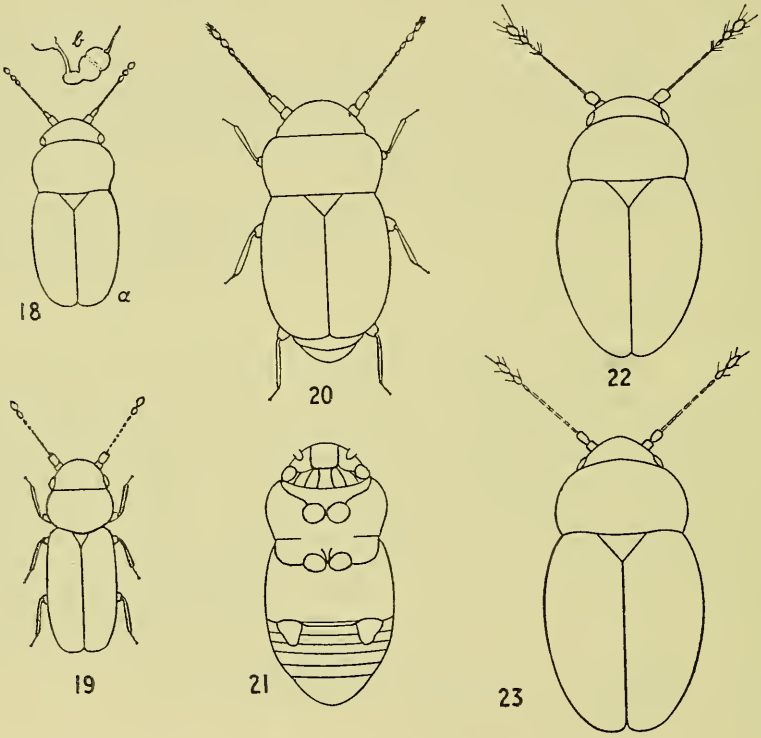
Type in South Australian Museum.

The species differs from *P. torresensis*, n. sp., in being still more parallel, elongate-rectangular. The antennal club is two-segmented as in *P. simsoni* Matth., but the segments are more pointed anteriorly. The head is longer and the hind angles of the pronotum are obsolete. The species is further distinguished by the yellow apices to the elytra. The pronotum is widest at the middle and the elytra are widest at middle, the pronotum being scarcely wider than the elytra.

PTILIUM LATUM, n. sp. (Text-figs. 20 and 21.)

Ovate-quadrate, broad, subdepressed, widest across elytra, bay-brown, lightly setose. Head large, rounded in front, convex, glabrous, nitid. Eyes not easily visible from above. Palpi small, inconspicuous, cream-coloured, terminal segment slender. Antennae not heavily clothed with hairs, flavous; scape large, wider than pedicel; pedicel rather long, narrower at apex than at base; segment 3 small,

obconic; 4 to 7 slender, cylindric; 8 and 9 elliptic, 9 rather larger than 8; 10 ovoid, larger than 9; 11 ovate-elliptic. Pronotum finely pubescent, lightly convex, widest just before middle; anterior and posterior margins straight, side margins concave except near base; anterior angles obsolete, posterior angles right angles. Scutellum deltoid, finely rugose. Elytra quadrate, setose, widest at middle, sides lightly curved, apices broad, apical outer angles rounded, exposing two abdominal tergites. Prosternum with episterna and epimera appearing. Mesosternum with intercoxal process prominent. Metasternum large, attaining sides of body; episterna and epimera invisible; posterior margin lamellate at centre, finely



18.—*Ptilium torresensis*, n. sp. 19.—*P. flavoterminum*, n. sp.
20, 21.—*P. latum*, n. sp. 22.—*Ptenidium hughesae*, n. sp.
23.—*Ptenidium otfordensis*, n. sp.

excavated on lateral portions for reception of coxae. Abdomen with six visible ventral segments. Anterior and intermediate coxae normal, nearly spherical, contiguous; posterior coxae subtriangular, remote. Legs rather robust; posterior tibiae extending beyond apex of pygidium. Length, 0·83 mm.; width, 0·4 mm.

Habitat.—Viti Levu, Fiji Islands (A. M. Lea).

Type in South Australian Museum.

Distinguished from all other species of the genus by its large size, broad form, elytra exposing the abdomen, and the unusual structure of the club of antenna. A notable departure from Matthews' figure, given in his Monograph, presumed to be typical of the genus, is the wide separation of the posterior coxae, a character which in itself is almost universally considered to be of more than specific significance. I have included this species under the genus on

account of its pronotal affinity. The pronotum, however, has the posterior and anterior margins peculiarly devoid of curvature.

PHILAGARICA PARVA, n. sp.

Oval, convex, brown, translucent, smooth, widest near base of elytra, sparsely pubescent, margin entire. Head deeply inserted. Clypeus with anterior margin straight. Eyes normal. Antennae rather short, 0·42 of length of body, 9th segment small, terminal one largest. Palpi with the thick segment irregular shaped, the one preceding greatly swollen at its apex, apical segment rather thick, lightly curved, dagger-shaped; subapical minute, invisible. Pronotum highly nitid, glabrous; lateral margins lightly curved; posterior angles not acute. Scutellum wide in proportion to length, glabrous. Elytra pubescent, tapering. Abdomen acute at apex. Metasternum and first four ventral segments of abdomen dark; metasternum rugose. Intercoxal process acute at apex, sides concave. Anterior coxae large, spheroidal; intermediate small. Length, 0·46 mm.; width, 0·27 mm.

Habitat.—Lord Howe Island (A. M. Lea).

Type in South Australian Museum, cotypes in Coll. Deane.

The species is closely allied to *P. agilis* Deane, from which it differs in having (1) metasternum and first four ventral segments of abdomen black; metasternum rugose; (2) intercoxal process more acute at apex, sides concave rather than parallel; (3) clypeus with anterior margin straight; (4) pronotum with lateral margins less convex; posterior angles not acute; (5) apex of abdomen more acute; (6) antennae with 9th segment very small; (7) elytra more pubescent; (8) scutellum wider in proportion to length; and (9) size much smaller, the largest of the series being much smaller than the smallest example of the kindred species.

PTENIDIUM HUGHESAE, n. sp. (Text-fig. 22.)

Elliptic-oval, widest across elytra, highly convex, nitid, without punctation, mahogany-brown. Head black, nitid, widely rounded in front, easily visible from above, convex, widest across eyes. Eyes black, easily visible from above. Antennae 0·49 of length of body; pedicel large, barrel-shaped; segments 3 to 8 slender, cylindric; 9 slender, torpedo-shaped; 10 and 11 large; hairs or setae on 9, 10 and 11 rather long, black; scape and pedicel light-brown, stem of flagellum lurid, club dark-brown. Pronotum widest a little before base, highly convex, highly nitid, dark-mahogany; anterior and lateral margins convex; posterior angles obtuse, anterior obsolete. Scutellum rather wide, short, indistinct; lateral margins concave. Elytra widest at one-third from base, narrowing to apex; apices rounded, scarcely dehiscent; very convex, mahogany-brown. Wings dark-brown; hair fringes long. Legs light-brown. Length, 0·87 mm.; width, 0·48 mm.

Habitat.—Otford, N.S.W. (per Miss Winifred Kent Hughes).

Type in Museum of Division of Economic Entomology, Canberra.

I have not seen an authentic example of *P. lawsoni* Matth., from New Zealand, but should say from the available literature that the above new species would resemble it in certain features, e.g., size, colour, clothing, and to a slight extent in general form and in punctation; but that it would differ markedly in the antennal club being two-segmented, whereas in Tonnoir's figure in Tillyard's text-book, *P. lawsoni* is represented as having a three-segmented club; also in wider head, slightly sinuous base to the pronotum, and in the apices of the elytra the present new species stands distinct. Moreover the reflexed margin over the eyes

and antennae, attributed by Matthews to the New Zealand form, is scarcely a feature in *P. hughesae*.

PTENIDIUM OTFORDENSIS, n. sp. (Text-fig. 23.)

Widely obovate, widest across elytra, convex, nitid, without punctures, black, sparsely lanate. Head black, nitid, widely rounded in front, easily visible from above. Antennae 0·47 of length of body; pedicel large, obovoid; segments 3 and 4 slender, somewhat ellipsoidal; 5 to 9 slender, cylindric; 10 and 11 large, 10 thickest near base, slender towards apex; 10 and 11 sparsely clothed with bristles; scape and pedicel light-brown, flagellum dark-brown. Pronotum widest near middle, convex, nitid, black; anterior margin faintly, lateral margins more strongly convex; posterior angles obtuse, anterior almost obsolete. Scutellum small, deltoid, indistinct. Elytra rather broad, obovate, convex, widest just before middle, apices rather broad, a little dehiscent; sparsely lanate, nitid, with broad shallow punctures widely separated and irregularly placed. Legs lurid. Length, 0·95 mm.; width, 0·52 mm.

Habitat.—Otford, N.S.W. (per Miss Winifred Kent Hughes).

Type in Museum of Division of Economic Entomology, Canberra.

Differs from *P. hughesae*, n. sp., in form wider, especially at apex of elytra, being almost subquadrate; prothorax widest near middle instead of near base; subapical segment of antenna produced anteriorly; colour somewhat darker; clothing as described.